



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,407	01/18/2002	Tomoki Tanaka	22397.305	4096
27683	7590	02/18/2004	EXAMINER	
HAYNES AND BOONE, LLP 901 MAIN STREET, SUITE 3100 DALLAS, TX 75202			AHMED, SHAMIM	
			ART UNIT	PAPER NUMBER
			1765	

DATE MAILED: 02/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/052,407

Applicant(s)

TANAKA ET AL.

Examiner

Shamim Ahmed

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 13-21 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 is/are allowed.
- 6) ☒ Claim(s) 8-11 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/1/02 & 6/25/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I, claims 1-12, filed on 9/8/03 is acknowledged. The traversal is on the ground(s) that the embodiments delineated are not patentably distinct and therefore constitute a single invention concept. This is not found persuasive because the groups of inventions are patentably distinct and independent as shown in the election/restriction requirement document of dated 8/12/03.

The requirement is still deemed proper and is therefore made FINAL.

### ***Specification***

2. The disclosure is objected to because of the following informalities: in the specification page 1, paragraph 0001, line2, the information of the continuing data needs to be updated. Such as serial No. 09/688,722, filed on October 16, 2000 is now U.S. patent 6,444,135.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1765

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 8-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peterson et al (6,335,224) in view of Brotz (5,128,174).

As to claim 8, Peterson et al disclose a process of applying a protecting coating to a micro-electromechanical device, wherein the coating can be a vacuum vapor deposited (col.4, lines 30-46, col.5, lines 7-22).

Peterson et al also disclose that a coating material is applied or poured over the device in either form of liquid or non-liquid form (col.5, lines 23-30).

Peterson et al fail to disclose the introduction of applying a vibration to the device.

However, in a coating process Brotz teaches that vibration is applied for avoiding bubbles in the desired coating layer by removing bubbles in order to form a smooth continuous coated layer (col.3, lines 39-57).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of claimed invention to combine Brotzs' teaching into Peterson et al's process for forming a smooth continuous layer with out any undesirable bubbles as taught by Brotz.

Art Unit: 1765

As to claims 9 and 11, Peterson et al teach that the device is an airbag accelerometer (col.4, lines 40-42).

Peterson et al teach that the coating material can be in a liquid form (col.5, lines 27-29), which required a curing step to harden the material (col.6, lines 49-50).

Peterson et al remain silent about the hardening of the coating material is into a gas permeable shell.

However, it would have been obvious that the liquid coating material is cured or harden into a gas permeable shell because by definition, Peterson et al's airbag accelerometer includes air or gas permeable shells, which are filled/covered with the protective coating of protecting the MEMS device during conventional packaging steps (col.7, lines 15-23)

Therefore, the coating material is hardened into the air shells of the airbag-accelerometer for protecting the MEMS device during packaging steps as taught by Peterson et al.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Peterson et al (6,335,224) in view of Brotz (5,128,174) as applied to claims 8-9 and 11 above, and further in view of Sallas et al (5,046,056).

Modified Peterson et al discussed in the paragraph 5 above but remain silent about the device such as the accelerometer is a sphere.

However, Sallas et al disclose an accelerometer with a spherical shape for easily and uniformly transmission of motion for the accelerometer (col.4, lines 3-12).

Art Unit: 1765

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of claimed invention to combine Sallas et al's teaching into modified Peterson et al's process for easily and uniformly transmission of motion for the accelerometer as taught by Sallas et al.

### ***Allowable Subject Matter***

7. Claims 1-7 are allowable over prior art.
8. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or suggest a process of coating a MEMS device, wherein the device is attached or mounted on a substrate having a first opening located proximate to the device and a second opening connected to the first opening and vacuum is applied to the second opening to draw a portion of the coating material towards the first opening as the context of claims 1 and 12.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shamim Ahmed whose telephone number is (571) 272-1457. The examiner can normally be reached on M-Thu (7:00-5:30) Every Friday Off.

Art Unit: 1765

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shamim Ahmed  
Examiner  
Art Unit 1765

SA  
February 7, 2004